

In the Claims:

Please amend claims 13, 15, 18-19, and 24, cancel claim 20 and add new claims 28-31 as follows:

13. (currently amended): A method for encapsulating a solder joint between an integrated circuit chip and a substrate, comprising the steps of:

forming a composition that includes a photoinitiator, a dispersed filler, and a resin precursor, wherein the filler has a particle size of 31 microns or less if the filler is silica, and wherein the resin precursor consists essentially of a cyanate ester monomer, a cyanate ester prepolymer, or a mixture of the monomer and prepolymer;

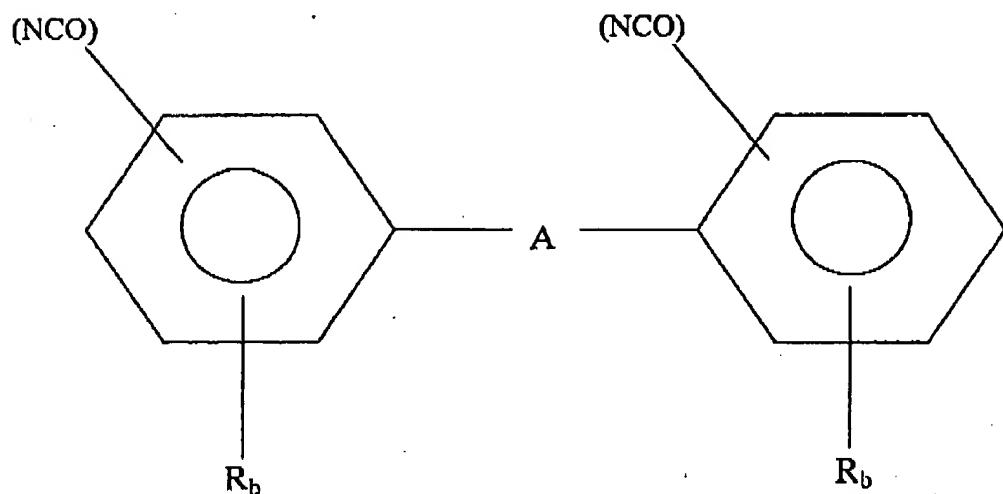
applying an amount of the composition at a thickness sufficient to cover substantially all of the solder joint; and

photocuring the composition to reinforce the solder joint, wherein photocuring the composition forms a resin in the composition from the precursor.

14. (original): The method of claim 13, wherein the cyanate ester includes at least two cyanate groups and is curable through cyclotrimerization.

15. (currently amended): The method of claim 13, wherein the cyanate ester is selected from the group consisting of compounds depicted by formulas 1 and 2:

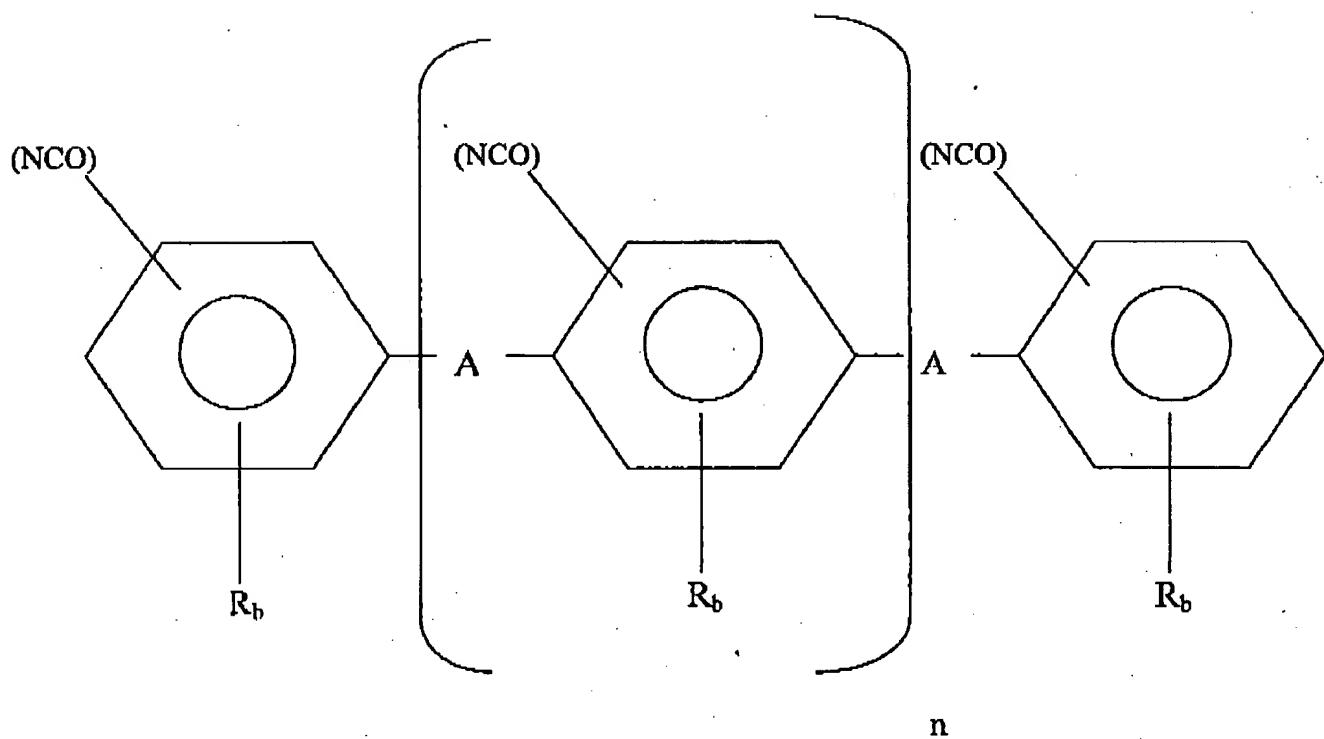
(1)



09/771,275

4

(2)



wherein each a and b independently include integers from 0 to 3, and at least one a is not 0; wherein c includes integers from 0 to 1; wherein n includes integers from 0 to 8; wherein each R is independently selected from the group consisting of non-interfering alkyl, aryl, alkaryl, heteroatomic, heterocyclic, carbonyloxy, carboxy, hydrogen, C₁₋₆ alkyl, C₁₋₆ allyl, C₁₋₆ alkoxy, halogen, maleimide, propargyl ether, glycidyl ether and combinations thereof; A is selected from the group consisting of C₁₋₁₂ polymethylene, CH₂, dicyclopentadienyl, aralkyl, aryl,

cycloaliphatic, $\text{CH}(\text{CH}_3)$, SO_2 , O , $\text{C}(\text{CF}_3)_2$, CH_2OCH_2 , CH_2SCH_2 , $\text{CH}_2\text{NHCII}_2$, S , $\text{C}(=\text{O})$, $\text{OC}(=\text{O})$, OCOO , $\text{S}(=\text{O})$, $\text{OP}(=\text{O})$, $\text{OP}(=\text{O})(=\text{O})\text{O}$, alkylene radicals, $\text{C}(\text{CH}_3)_2$, and combinations thereof.

16. (previously amended): The method of claim 13, wherein the cyanate ester is selected from the group consisting of cyanatobenzene 1,3-and 1,4-dicyanatobenzene, 2-tert-butyl-1,4-dicyanatobenzene, 2,4-dimethyl-1,3-dicyanatobenzene, 2,5-di-tert-butyl-1,4-dicyanatobenzene, tetramethyl-1,4-dicyanatobenzene, 4-chloro-1,3-dicyanatobenzene, 1,3,5-tricyanatobenzene, 2,2' 4,4'-dicyanatobiphenyl, 3,3',5,5'-tetramethyl-4,4'dicyanatobiphenyl, 1,3-dicyanatonaphthalene, 1,4-dicyanatonaphthalene, 1,5-dicyanatonaphthalene, 1,6-dicyanatonaphthalene, 1,8-dicyanatonaphthalene, 2,6-dicyanatonaphthalene, 2,7-dicyanatonaphthalene, 1,3,6-tricyanatonaphthalene, bis(4- cyanatophenyl)methane, bis(3-chloro-4-cyanatophenyl)methane, 2,2-bis(4-cyanatophenyl)propane, 2,2-bis(3,5-dichloro-4-cyanatophenyl)propane, 2,2-bis(3,5-dibromo-4- cyanatophenyl)propane, bis (4-cyanatophenyl)ether, bis (p-cyanophenoxyphenoxy)-benzene, di(4-cyanatophenyl)ketone, bis(4-cyanatophenyl)thioether, bis(4-cyanatophenyl)sulfone, tris (4-cyanatophenyl)phosphite, tris(4-cyanatophenyl)phosphate and combinations thereof.

17. The method of claim 13, wherein the photoinitiator is selected from the group consisting of aryl diazonium, triphenylsulfonium, diphenyliodonium, diaryliodosyl and triarylsulfoxonium salts.

18. (currently amended): The method of claim 13, wherein the filler comprises from composition contains about 40% to about 75% by weight of the composition dispersed silica

19. (currently amended): The method of claim 13 18, wherein the dispersed filler includes fused silica and amorphous silica.

20. (canceled)

21. (previously amended): The method of claim 13, wherein a coefficient of linear thermal expansion of the cured composition is from about 26 to about 39 ppm/degree C.

22. (previously amended): The method of claim 13, wherein a glass transition temperature of the cured composition is from about 100 to about 160 degrees C.

23. (previously amended): The method of claim 13, wherein the composition includes from 1 to 20 parts of surface treating agents selected from the group consisting of vinyltrimethoxysilane, vinyltrichoxysilane, N(2-aminoethyl)3-aminopropylmethyldimethoxysilane, 3-aminopropylethoxysilane, 3-glycidoxypropyltrimethoxysilane, 3-glycidoxypropylmethyl dimethoxysilane and combinations thereof, based on 100 parts of the resin.

24. (currently amended): The method of claim 13, wherein the composition further comprises a filler selected from the group consisting of Silica, Aluminum Oxide, 92% Alumina, 96%

Alumina, Aluminum Nitride, Silicon Nitride, Silicon Carbide, Beryllium Oxide, Boron Nitride and Diamond powder.

27. (previously added): The method of claim 1, wherein the cured composition exhibits a coefficient of linear thermal expansion of about 26 ppm/ °C to less than about 39 ppm/ °C and a glass transition temperature between 100 °C and 160 °C.

28. (new): The method of claim 13, wherein the resin precursor is a mixture of polyfunctional cyanate esters with at least one cyanate ester having hydroxy groups and radical-polymerizable unsaturated double bonds.

29. (new): The method of claim 28, wherein a ratio of cyanato groups to hydroxy groups in the cyanate ester is in the range from 1:0.1 to about 1:2.

30. (new): The method of claim 13, wherein the photoinitiator is in the range of from about 0.01 to about 20 weight percent of the composition.

31. (new): The method of claim 13, wherein the photoinitiator is selected from the group consisting of metal carbonyl complexes and ionic salts of organometallic complex cations.